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ABSTRACT

This issue highlights findings of Marshall S. Smith and Jennifer O'Day's "Educational Equality 1966: Then and Now," a chapter of "The 1990 American Education Finance Association Yearbook: Spheres of Justice in Education," edited by Deborah A. Verstegen and James G. Ward. The "Brief" first focuses on educational trends over the past quarter century, stressing differences between the opportunities provided African-American and White students. Trends and variations among goups in three input categories are examined: (1) out of school resources (family poverty, preschool attendance, and parental education); (2) racial and social class differences among schools; and (3) inequalities in school (fiscal and instructional) resources. Part 2 describes changes in achievement outcomes. Compared to equal opportunity progress since 1966, there is evidence of progress toward equality of educational outcomes such as educational attainment and achievement scores. Part 3 attributes this progress to changes in family resources (despite increasing poverty for both African-Americans and Whites since the mid-1970s), in demography and racial isolation, and in instruction and curriculum. Part 4 discusses policy implications and offers proposals for policy interventions: improving school readiness; developing high quality, coherent school programs; and enriching programs for the educationally needy. (39 references) (MLH)

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Equality in Education: Progress, Problems and Possibilities

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CPRE POLICY BRIEFS

REPORTING ON ISSUES AND RESEARCH IN EDUCATION POLICY

Equality in Education: Progress, Problems and Possibilities

In 1966, James Coleman and others published a landmark study, *Equality of Educational Opportunity Report (EEOR)*. The data showed clearly that in terms of conventional input and outcome measures, the United States fell far short of providing equal educational opportunity to all students.

Now, a quarter century after the *EEOR*, are educational opportunities and outcomes more equal? How have the events of the past 25 years altered the basic conclusions of the *EEOR?* Are school inputs—such as curriculum, teacher quality and expenditures—more equal? Along what dimensions and for what groups have changes occurred? What about school outcomes? Are test scores more uniform across regional, social class and racial groups of students? Where have the changes occurred, and what light do input and outcome trends shed on the controversial *EEOR* conclusions about the limited relationship between school resources and student outcomes?

Marshall S. Smith and Jennifer O'Day address these issues in a paper, "Educational Equality: 1966 and Now," which brings the somewhat encouraging news that the formerly empty cup is now half-full.[1] There continue to be great, and in some areas increasing, differences in the quality of educational *inputs*. However, the good news is that there is evidence of considerable progress toward the goal of equality of educational *outcomes;* gaps in achievement between African American and white students, and to a lesser extent between income groups, have been substantially reduced.[2]

This issue of **CPRE Policy Briefs** highlights these findings and attempts to explain them. The Brief first focuses on trends in education over the past quarter century, with particular emphasis on differences between the opportunities provided African American and white students. It then describes trends in achievement outcomes, concentrating again on differences between African American and white students. The third section draws on the trend data on educational "inputs" to attempt to explain the achievement outcome trends. *Particular attention is paid to possible reasons for the dramatic reduction of the differences in achievement between African American and white students.* A final section makes predictions about future progress in closing the achievement gap and suggests directions for reform.

I. Has the level of inequality in educational "inputs" changed in the last 25 years?

The analysis focuses on educational "inputs" that could be expected to have a clear and strong relationship to student achievement. Trends and variations among groups in three categories of inputs are examined: (1) out of school resources, (2) the distribution of racial and social class groups of students among schools, and (3) within and among school fiscal and educational resources. In each case, there have been substantial changes in degree of inequality, but the trends have not always been in the desired direction.

Out of School Resources. Three indicators—family poverty, preschool attendance, and parental education—reflect both the child's educational preparedness for school and the continuing influence of the financial and educational resources of the home.

Family Poverty

Figure 1 shows trends from 1960 to 1987 in the incidence of poverty for African American, Hispanic, and white children. The basic overall story is that things improved from 1960

[1]"Educational Equality: 1966 and Now," which draws from research conducted through the Center for Policy Research in Education, appears in full as a chapter in *The 1990 American Education Finance Association Yearbook: Spheres of Justice in Education*, edited by Deborah A. Verstegen and James Gordon Ward. Copyright © 1991 by American Education Finance Association. All rights reserved. Used by permission of Harper Business, a division of HarperCollins Publishers.

[2]Because of space limitations, the authors focus primarily on inequalities between African American and white students and between students from poor and well-to-do families. They were unable to examine trends over time in Hispanic-White and male-female differences. Chapter 7 of the National Research Council's (NRC) recent study *A Common Destiny: Blacks and American Society* (Jaynes and Williams, 1989, also examined trends over time in the education of African American students. The NRC study provides a powerful overall context within which to examine many of these issues.

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until the mid-1970s when the number of children in poverty began to increase. Between 1973 and 1987 the incidence of poverty for all children climbed from 14 percent to over 20 percent, with further increases expected (see Figure 1). Moreover, the gap between the poverty rates for African American and white children, which had decreased sharply prior to 1973, stabilized during this period and even increased slightly in the 1980s.

These trends have important implications for educational outcomes. The effect of household income on student educational attainment is substantial, partially reflecting the expense and forgone income required by continued education (Jencks et al. 1972). The direct effect on student achievement is less though still considerable.[3] More important than the direct effects, however, are the indirect effects of poverty on achievement. With poverty in the United States, comes a reduction in the family's ability to provide the health care and other resources that a child needs in order to be prepared for school.

Pre-school Attendance

From 1965 to the late 1970s, there was a rapid increase in pre-school opportunities for minority and low-income children due to Head Start. These opportunities probably acted to increase the overall equality of opportunity for students in low-income families. However, the percentage of non-low-income students attending pre-schools in 1977 still exceeded the percentage of low-income students attending such schools, and the gap in attendance between poor and non-poor children increased dramatically from 1977 to 1986.[4]

Parental Education

Studies of academic achievement have consistently found a strong relationship between parents' level of educational attainment (especially that of the mother) and the achievement of their children (Jencks et al. 1972; Hoffer and Coleman 1990; Berlin and Sum 1988). There has been a considerable increase in the educational attainment of parents over the past 25 years for all racial groups, but especially for African Americans. Between 1970 and 1988, for example, the percentage of African American parents of elementary school aged children who had completed 12 or more years of schooling nearly doubled, from 36 to 69 percent. Over the past 5 years, however, the increase has leveled off.[5]

Racial and Social Class Differences Among Schools. The *EEOR* documented the massive racial segregation of the U.S. schools in 1966. It also described the substantial and, especially in large schools, pervasive differences among schools in social class composition. There have been great changes since then, especially in racial composition.

Racial Isolation

Differences in the racial makeup of schools can be briefly summarized as follows:[6]

Between 1968 and 1972 there was large-scale desegregation of U.S. schools. In 1968, 77 percent of African American students attended predominantly minority schools (over 50 percent minority) and 64 percent attended intensely segregated (90-100 percent minority) schools. By 1972, the corresponding figures were 64 percent and 39 percent. Between 1972 and 1980, the national percentage of African American students attending predominantly minority schools did not change, while the percentage in intensely segregated schools dropped slightly to 33 percent. These overall figures have not changed much since 1980. Almost two-thirds of African American students remain in predominantly minority schools; nearly one-third remain in almost entirely segregated schools.[7]

The question about the educational consequences of racial segregation is complex. The decade from 1965 to 1975

[3]For a recent general discussion of the relationship between poverty, school achievement, and the future occuupations of students, see Berlin and Sum 1988. For an earlier discussion, see Jencks et al. 1972.

[4]Select Committee on Children, Youth and Families 1989, p.137.

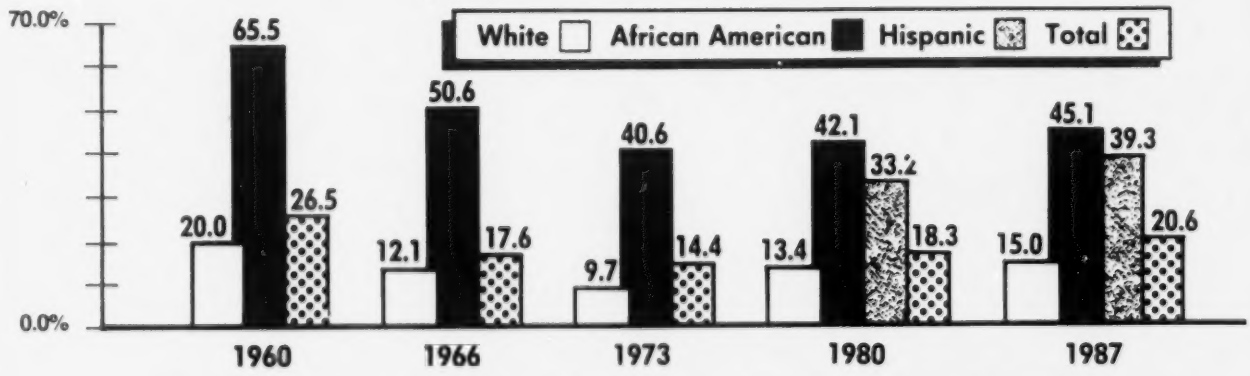
[5]Select Committee on Children, Youth, and Families 1989, pp. 62-63. The leveling off of years of schooling of African American parents reflects the decline during the late 1970s and the early and middle 1990s in the proportion of African American high school graduates going to college.

[6]Except where otherwise noted, these conclusions are drawn from Orfield, Montfort and Aaron 1989.

[7]In contrast to trends for African Americans, the percent of Hispanics in predominantly minority schools increased consistently from 1968 to 1980, from 55 percennt to 71 percent, and has remained at that level. The percentage in schools with 90 to 100 percent minorities increased from 23 percent in 1968 to 32 percent in 1986.

FIGURE 1

Percentage of Children (Age 0-18) in Poverty



Source: U.S. Department of Commerce - Bureau of the Census, Current Population Reports Series P-60, No. 163 *Poverty in the United States 1987* (pp. 9-14).

spawned a variety of confusing evaluations. The typical finding was that when other factors were statistically controlled, the effect of racial desegregation on school achievement for African Americans was small and for whites essentially non-existent (Kaestle and Smith 1982). There have been few evaluations since then.

However, the fact that there may be little independent effect of segregation on achievement when other major factors are controlled does not mean that racially isolated schools provide the same level of educational opportunity as desegregated schools. The educational quality of most predominantly minority schools, particularly in the cities and poor rural areas, is not comparable to that of predominantly white schools (Maeroff 1988, pp. 633-38; CED 1987, chapter 3, Oakes 1990). Moreover, the segregated school systems of the South historically provided an overall lower standard of education when compared with non-Southern schools. Desegregation—and even the anticipation of desegregation—resulted in an upgrading of the quality of schools for all Southern children, but particularly for African Americans.[8]

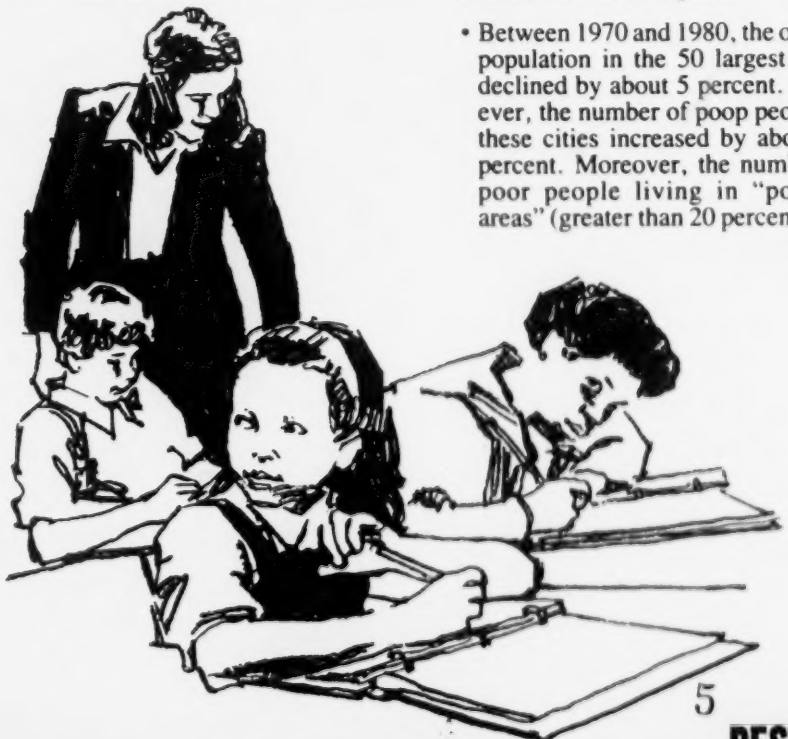
Social Class Isolation

One of the most impressive findings of the *EEOR* was the importance of social class composition of the school in relationship to individual student achievement. The *EEOR* study determined social class based on a variety of background characteristics of the student's classmates. In subsequent studies, however, the main indicator of social class composition of schools has been "proportion of students in poverty" (see for example, Wolf 1977; Kennedy et al. 1986; Orland 1990).

Two main conclusions are evident from such work. First, the relationship between proportion of students in poverty and average school achievement is strongly negative. Further, students in schools with the highest concentrations of poor students (over 24 percent poor) have especially low achievement. Second, there is an independent effect of aggregate school poverty on individual achievement even when other factors (e.g. level of individual parent education) are controlled (Orland 1990). Thus, the National Assessment of Chapter 1 found that "*non*-poor students attending a school with large proportions [greater than 24 percent] of poor students are more likely to fall behind than are *poor* students who attend a school with a small proportion [less than 7 percent] of poor students" (Kennedy et al. 1986, p. 22; emphasis added).

The relationship between the concentration of poverty at the school level and individual student achievement is particularly disturbing in light of the trend toward greater concentration of poverty nationally. While 1990 figures are not yet available, analyses based on the 1980 Census show several patterns:

- Between 1970 and 1980, the overall population in the 50 largest cities declined by about 5 percent. However, the number of poop people in these cities increased by about 12 percent. Moreover, the number of poor people living in "poverty areas" (greater than 20 percent poor residents) increased by 31 percent and the number living in "high poverty areas" (greater than 40 percent poor) increased by 66 percent.
- The increase in high poverty areas occurred almost entirely among people of color and primarily in large urban areas.[9]
- Because schools in high poverty areas are likely to have greater proportions of poor students (Birman, Orland et al. 1987), the concentration of poverty in central cities has disturbing implications for achievement trends in urban schools in general and among African American and Hispanic American students in particular.



Inequalities in School Resources. Many factors may contribute to the relationship between school poverty and student achievement. One obvious possibility is that poor and non-poor and minority and non-minority schools differ systematically in the fiscal and instructional resources available to their students.

Fiscal Inequalities

The past 25 years have seen vast changes in school funding policies. During this period, the cost of schooling increased as the role of schools expanded to include, for example, special services for limited English proficient and handicapped students. Between 1966 and 1989, annual per pupil expenditures in constant 1989-90 dollars increased from about $1,900 to $4,700 nationally (NCES 1990).

Local funding across the nation led school expenditures to vary widely among states, among districts within states, and even among schools within districts as money for schooling followed local wealth and the commitment to education of the local electorate. Spurred by studies such as Arthur Wise's *Rich Schools, Poor Schools* (1968), which argued that wide disparities in expenditures might violate federal or state constitutional guarantees, many states passed laws directed at reducing disparities among districts. It appears that the reforms of the early 1970s had an important short-term equalizing effect on the level of resources available to schools and districts with large numbers of "at-risk" students.

[8]For a discussion of this phenomenon, see Ashmore 1954.

[9]The figures on the concentration of poverty are derived primarily from the data and analyses in Lynn and McGreary 1990.

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But soon after, a combination of very high inflation in the late 1970s, fiscal constraints, changes in state formulas, and politics favoring the advantaged operated to render many of the remedies worthless (Berne 1988). Currently, the ranges in per pupil expenditures for districts in the same state are striking For example, in 1986-87 the highest spending district in Colorado spent $10,888 while the lowest spent $2,619. A less dramatic but still compelling comparison is contained in a recent article by Taylor and Piche (1991). They report that a court found that, in 1990, the 100 wealthiest districts in Texas spent $7,233 per pupil while the 100 poorest districts spent only $2,978.

To the casual observer, there seems little question but that disparities in educational expenditures would be closely related to educational outcomes. But the picture is not at all clear. In a recent review article, Hanushek (1990) argues that two decades of research consistently points to the conclusion that differences in school expenditures are not systematically related to variations in student performance. Hanushek goes on to note that the same research points to great differences in teacher quality but finds little relationship between expenditures and teacher quality as assessed by education, experience and salary.

Other researchers, while agreeing that the data indicate little direct effect on achievement of variation in expenditures, reach different conclusions. One argument is that the studies themselves are flawed and do not address some important variables. For example, it is particularly difficult to separate the effects of variations in school finances from the effect of what money buys. Thus, high quality teachers may opt for lower salaries in districts that pay for high quality working conditions. A second argument is that few studies have controlled adequately for the cost of purchasing services. Thus, a relatively high per pupil expenditure in a central city may not purchase the same level of resources as a lower per pupil expenditure in a less costly setting. (Committee on Education and Labor 1990).

Differences Among Groups of Students in Instructional Resources. Has the quality and content of instruction changed over the past 25 years for all students and especially for minority or low-income students? What is the present condition of instruction? Are there major differences now between the quality and content of instruction for minority and low-income students in comparison to students from more advantaged families? These are extremely complicated and difficult questions to answer due to lack of data and careful prior analysis by others. This discussion, therefore, is somewhat speculative.

Curriculum Trends

Over the past 25 years, there have been a number of trends in school curricula. Scattered data give some evidence about the impact of these trends. During the early part of the period in the middle 1960s, the nation was continuing to respond to the "crisis" spurred by Sputnik. Major curriculum development efforts in math and science focused the content on problems (both abstract and concrete) that involved less memorization of facts and more conceptual understanding. Shymansky and others (1983) concluded that these curricula had a significant positive effect on achievement. Although the results of the math and science reforms were impressive, they were particularly challenging to implement well and were not as widely used as their creators had hoped. In the late 1960s and early 1970s, two new curriculum movements emerged.

One of these was the "back to basics" movement which operated primarily at the elementary and middle school level. This movement grew from efforts to improve equality of educational opportunity through compensatory education programs. The back to basics strategy focused on imparting to students core reading and arithmetic facts and skills, often to the exclusion of more complex reading strategies and mathematics and other subject matter content. While the basic skills strategy may have had its most dramatic impact on the curriculum and nature of instruction in lower income neighborhoods, it quickly permeated throughout the system. The focus on basics has continued into the present, fueled by "minimum competency testing" by states in the late 1970s and early 1980s and by many advocates of the "effective schools movement."

Alongside the emphasis on basic skills was the proliferation in the late 1960s and early 1970s of experimental, non-academic courses and an overall de-emphasis on traditional studies in secondary schools.[10] By the middle and late 1970s, this interest in experimental courses had begun to wane, but not before its effect had been felt throughout the entire system.

New Book Focuses on Equity Issues

This brief contains highlights from "Educational Equality: 1966 and Now," one chapter of an exciting new book edited by Deborah A. Verstegen and James G. Ward. The volume takes a cross-disciplinary look at issues of justice and fairness in schooling. Some of the nation's most brilliant scholars examine five spheres of justice: history, economics, philosophy, sociology, and the law. Chapters address both theoretical and practical considerations relevant to education in the 1990s and beyond.

The 1990 American Education Finance Association Yearbook: Spheres of Justice in Education (361 pp., hardcover) is available for $45 from: Harper Business Order Dept., P. O. Box 588, Dunmore, PA 18512; phone: 1-800-331-3761.

The de-emphasis on academic studies in secondary school, the resulting fragmentation of the secondary curricula, and the overall concentration on basic skills at all levels had, by the early 1980s, produced an educational system that was sorely lacking in challenging intellectual content. During the 1980s, nearly every state sought to address these problems at the secondary level by increasing coursework requirements for high school graduation. College entrance requirements were often raised as well. Little systematic reform was attempted at the lower grade levels.

These new requirements seem to have had little effect on students bound for four-year colleges because they were already taking the newly required courses, but they have resulted in increases in the number of "academic" courses taken by low- and middle-range secondary school students. However, because the new requirements are generally vague and can be met without major changes in the actual content or methods of instruction, the academic quality of these courses remains unclear (Elmore et al. 1991).

Because of the limitations of the reforms of the 1980s, the latest reform reports have pointed to the failure of U.S. schools, both elementary and

[10]For example, see Raizen and Jones 1985, page 102, for information on science coursetaking during these years.

secondary, to engage the majority of their students in the serious learning of academic content (Elmore and Associates 1990). Moreover, these reports continue to find that the preparation of teachers is poor, as is the quality of the curriculum.

Inequality in Instruction

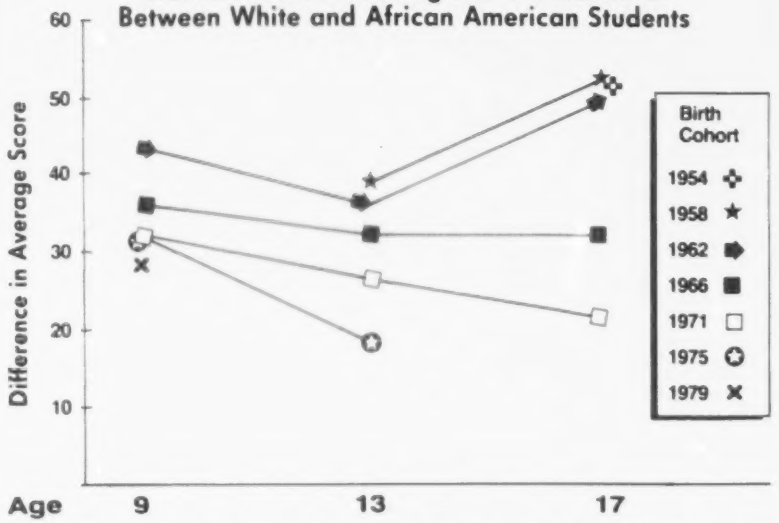
We have painted a bleak picture of the overall quality of schooling in the United States. But it is important to note that there are many, many bright spots among the approximately 16,000 school districts, 100,000 school buildings and 2 million classrooms in the nation. Our description also masks the considerable variation in access to high quality content and teaching that exists between "advantaged" and "disadvantaged" students.

In general, secondary schools with large proportions of minority and low-income students offer few advanced and more remedial courses and have smaller academic and larger vocational programs than other schools (Oakes 1985; Rock et al. 1985). This variation is particularly evident in math. For example, only 50 percent of schools with 90 percent minority students offer even one section of calculus as compared to 80 percent of predominately white schools. This means that students in the other 50 percent of the minority schools, no matter what their individual talents, are denied any access to a main gatekeeping course for college math and science majors. Within schools, students in different tracks also have differential access to various courses. Again, this is especially true in math (Oakes 1990).

What may be even more important than course titles, is the type of knowledge and skill instruction available to students in the classroom itself. Studies of elementary schools have noted that students in poor or "working class" schools and classes and students with limited proficiency in English receive instruction in low-level literacy, computational, and computer skills. Students from more affluent backgrounds or neighborhoods, white students, and native speakers of English are more likely to receive emphasis on independent thinking and questioning and on complex skills like computer programming, literary interpretation and library research. (Anyon 1980, 1981; Moll 1990; CSOS 1983; Diaz et al. 1986) This gap in content continues and widens in secondary school (Oakes 1985; Oakes and Lipton 1990).

FIGURE 2

Trends in NAEP Reading Score Differences Between White and African American Students



Note: For the source and description of data, please see Table 1. Individual symbols for the 1954 and 1979 cohorts represent the only NAEP administrations for these groups to date.

TABLE 1

NAEP Reading Scores for African-American (AA) and White (Wh) Students Displayed by Birth Cohort and Age*

		AGE IN YEARS					
		9		13		17	
Birth Cohort	Group	Score	Diff. Wh-AA	Score	Diff. Wh-AA	Score	Diff. Wh-AA
1954	AA	—	—	—	—	239	52
	White	—		—		291†	
1958	AA	—	—	222	39	240	53
	White	—		261†		293	
1962	AA	170	44	226	36	243‡	50
	White	214†		262		293	
1966	AA	181	36	232‡	32	264	32
	White	217		264		296	
1971	AA	189	32	236	27	274	21
	White	221		263		295	
1975	AA	186	32	243	18	—	—
	White	218		261		—	
1979	AA	189	29	—	—	—	—
	White	218		—		—	

*From Data Appendix in Mullis and Jenkins 1990. This table uses data from five assessments which were given in 1971, 1975, 1980, 1984, and 1988. The scores are the reading proficiency scale scores—the standard deviation for the age 9 scores is roughly 40 points; for the age 13 scores, roughly 35 points; for the age 17 scores, roughly 40 points.

†The "white" scores for the 1971 (1962 cohort for 9-year-olds etc.) assessment included scores for Hispanics—the white scores for the other assessments did not.

‡The 17-year-old scores recorded for the 1962 birth cohort are from the 1980 NAEP and should really be for a 1963 birth cohort. The 13-year-old scores recorded for the 1966 birth cohort are from the 1980 NAEP and should really be for a 1967 birth cohort.

Not only does the content of instruction vary for different groups of students, so does the quality of teaching they receive. Observers have noted that instruction in low-income schools and lower ability classes is more likely to be fragmented, to rely on workbooks, dittos and prefabricated kits, and to emphasize memorization and recitation over problem solving and independent thinking. In such classes, teachers also place greater emphasis on discipline, are more punitive and less enthusiastic, engage less often in meaningful questioning of their students, expect less from their students and assign less homework than their counterparts in predominantly white, suburban or high ability classes (Anyon 1980, 1981; Oakes 1985; Dreeben and Barr 1988; Gamoran 1990).

The differences in instructional strategies may reflect, in part, differences in curricular goals and materials. However, differences in classroom teaching may also be a product of the relative shortage of qualified teachers in schools and classes serving large proportions of minority and poor children (Darling-Hammond 1990; Oakes 1990).

II. Have there been changes in achievement outcomes among different groups of students?

In comparison to the condition of equality of educational opportunity in 1966, there is evidence of progress toward a goal of equality of educational outcomes.

Educational Attainment. Before examining achievement test score trends, it is useful to consider another commonly examined educational outcome: educational attainment. *The Condition of Education 1990* reports two indicators of educational attainment: the percentage of students who drop out of grades 10 through 12 and the rate of high school completion for 25- to 29-year-olds.

Both measures tell the same story. Between the late 1960s and the late 1980s, the gap between African American and white student attainment narrowed dramatically even while white student attainment was increasing. In 1965 approximately 50 percent of African American 25- to 29-year-olds reported that they had completed 12 or more years of school; by 1975 the figure was about 70 percent; by 1980 about 77 percent; and by 1987 it was 83 percent. Whites started at 70 percent in 1965 and climbed steadily to about 86 percent in 1980, where the curve leveled off.[11]

FIGURE 3a

NAEP Reading Scores at Age 9

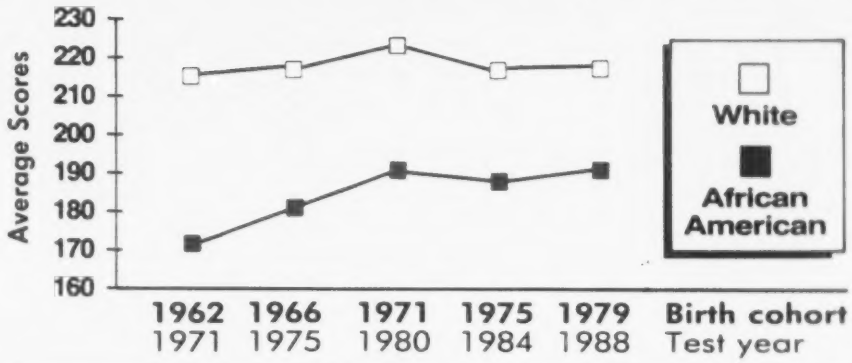


FIGURE 3b

NAEP Reading Scores at Age 13

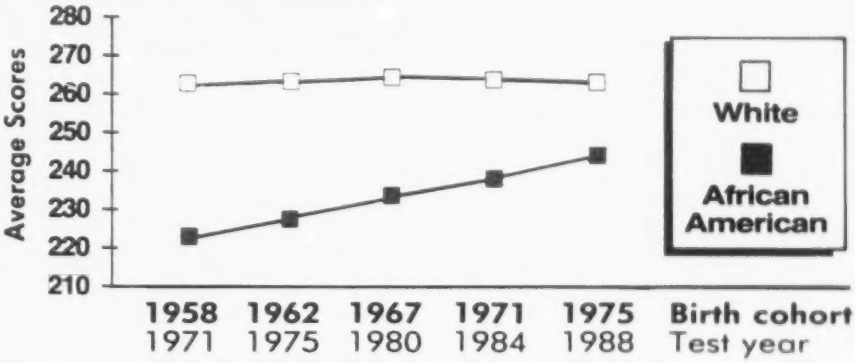
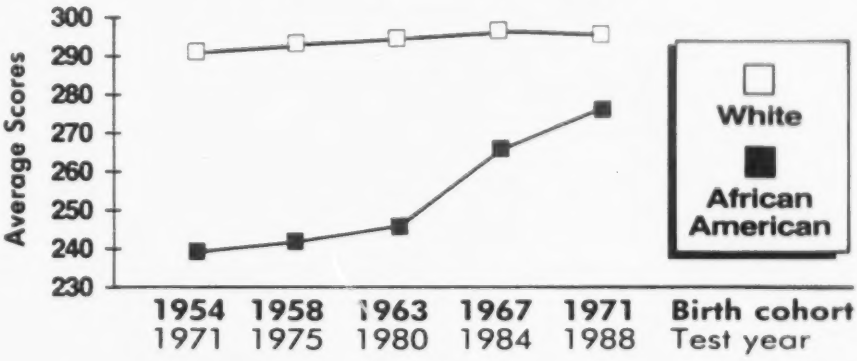


FIGURE 3c

NAEP Reading Scores at Age 17



Note: Figure 3a, 3b, and 3c: Vertical scales differ but intervals are identical. For the source and description of data, please see Table 1.

Educational Achievement. The attainment rates, along with the input indicators discussed above, provide background data for examining changes in achievement as measured by differences in test scores. In 1966, the *EEOR* found considerable variation in verbal, mathematics, and reading test

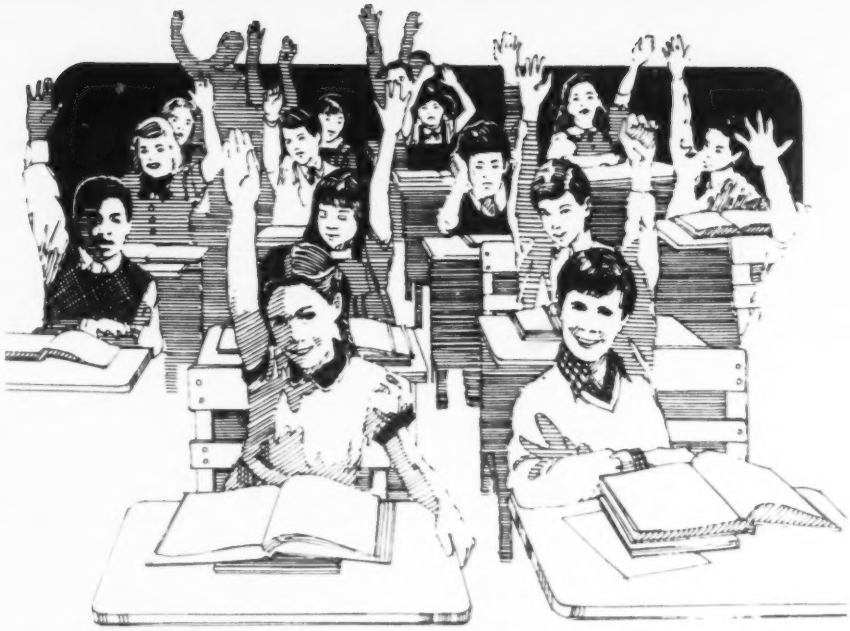
[11] See NCES 1990 (pp. 20-23). There is always controversy surrounding reports on dropouts and high school completion. However, the general points, that African American educational attainment increased dramatically and closed much of the achievement gap during this period is not controversial.

scores among students from different regions, races and social classes. Scores of African American and Hispanic students were much lower than those of white students at all grade levels. Low-income students and students with parents who had not graduated from high school had lower test scores than more "advantaged" classmates. But since that time, the difference in test scores among groups of students has substantially decreased.

Both Table 1 and Figure 2 show the differences in reading achievement between African American and white students by age and by birth cohort, as measured by the National Assessment of Educational Progress from 1971 to 1988. A close examination of Figure 2 provides evidence of two important trends. First, looking vertically across cohorts at each age level, one observes substantial decreases in the gap between African American and white scores over time. Thus, white students born in 1962 scored 44 points higher on the reading test at age 9 than did their African American counterparts; by the time the 1979 cohort took this test in 1988, the gap for 9-year olds had decreased to 29 points. For 17-year-olds, the narrowing of the margin is even more marked: from a difference of 52 points for the 1954 cohort down to 21 points for those born in 1971.

Also significant are the trends in scores as each cohort progresses through school. Reading the graph horizontally, one notes the increasing disparity i African American and white scores as the 1958 and 1962 cohorts move toward graduation. It is not until the 1966 cohort that we begin to see a narrowing of the achievement gap across school years from age 9 to age 17. Moreover, after 1966 the size of the reduction appears to be increasing for each successive cohort of students. For the 1966 group, the reduction in the gap is only 4 points (or 0.1 standard deviation); for those born in 1971 it is 11 points (0.28 standard deviation); and for the 1975 cohort there is a 14 point reduction from age 9 to age 13; this represents a decrease of almost .35 standard deviations in the gap during these four elementary-middle school years.

Noting this overall reduction in the gap, however, provides but a partial picture of achievement trends for these two groups. It is equally important to discern the patterns in African



American and white achievement that account for the diminishing differences between them. Figures 3a-3c display the disaggregated reading scores by race at each age level over time. Note that the curve for whites is nearly flat in each graph, indicating no substantial change in reading achievement for whites between 1971 and 1988. In contrast, reading scores of African Americans have increased significantly for each age group during this time: 19 points for 9-year-olds, 21 points for 13-year-olds, and 35 points for 17-year-olds. Similar, though somewhat less dramatic patterns occur for NAEP math and science tests as well (see Table 2 and Figure 4).

Overall, then, during the past 20 years the gap in student achievement between African Americans and whites has been reduced by about 50 percent in reading, between 25 and 40 percent in math, and about 15-25 percent in science. To a lesser extent, the achievement gap between middle and lower class groups has also diminished over the past 15 years.[12] These reductions took place during a time when the NAEP scores for whites in reading remained about level, so the progress in closing the gap reflects great gains on the part of African American and lower income students.

Finally, it is very important to underscore that the data indicate that achievement gains for African American students occurred at each of three different periods during a student's life. The cross-sectional data show clearly that 8-year-old students who were born in 1979 scored significantly better than similar aged students born in 1962 and 1966. This suggests that the infant, preschool, and early elementary school experiences have improved for African American students over the past quarter century. Moreover, comparisons between cohorts show that African American students continued to gain relative to whites during the school experience of students, between the time they were 9 and 13 years old and between age 13 and 17.

The implication is that the quality of schooling experiences for African American students relative to whites clearly improved over the past 25 years. Finally, the gains in relative achievement for African American students between 9 and 17 years old have increased over cohorts—not only have there been gains for each cohort but the gains have increased in magnitude. These data especially seem to indicate the importance of increased equality in schooling experiences. Overall, then both "out of school" and "within school" experiences appear to have had substantial effects on closing the achievement gap. The following section explores these effects in greater detail.

III. Why has the achievement gap between white and African American students been shrinking?

How did African Americans make such important gains while at the same time

[12]See Smith and O'Day 1991 for a comparison of achievement trends for "advantaged" and "disadvantaged" students.

suffering from such great, and, in some cases, increasing, disparities in educational and financial resources? A brief review of changes over time in the equality of distribution of "educational resources" offers some insight into why the outcomes have changed.

- Changes in the educational and economic resources of the family appear to have contributed substantially to the reduction of the achievement gap.

In the past 25 years, there has been a dramatic increase in the level of parental education for African Americans, although the increase has levelled off in the past 5 years. Also during this period, the opportunity to attend pre-school has increased substantially for low-income African Americans and whites. Furthermore, in comparison to 1960 figures, poverty has declined considerably more for African Americans than for whites. These factors are likely to have contributed to decreasing the achievement gap for all ages, but particularly in the early grades when the influence of the home environment is especially strong.

It is important to note, however, that the poverty rate for African Americans continues to be approximately three times that of whites and that since the mid-1970s there have been large increases in the incidence of poverty for both groups, with African American poverty increasing at a slightly higher rate. This fact may account in part for the relative leveling off of 9-year-old reading achievement for both whites and African Americans since 1980 (see Figure 3a).

- Changes in the demography and racial isolation of students in the nation also appear to have had a substantial effect on the reduction of the achievement gap.

One factor was the considerable migration of African American families from 1960 to 1970 when 12 percent of them moved from the South to the North and West. The difference in educational quality between regions during this time period combined with the overall urbanization of African Americans almost certainly had a positive effect on African American achievement test scores. Moreover, improvements in educational opportunity in the South, stimulated both by desegregation and by economic recovery in the region, have also contributed to achievement gains by African Americans, over 50 percent of whom continue to live in the Southeast.

TABLE 2

NAEP Math and Science *Difference* Scores† Between African American and White Students Displayed by Birth Cohort and Age*

Crude Birth Cohorts	MATH Age in Years			SCIENCE Age in Years		
	9	13	17	9	13	17
1960	—	—	—	—	—	57
1961	—	—	38	—	—	—
1964	—	—	—	—	48	—
1965	—	42	32	—	—	58
1968	—	—	—	55	—	—
1969	32	34	29	—	40	45
1971	—	—	20	—	—	42
1973	29	24	—	42	38	—
1975	—	29	—	—	36	—
1977	25	—	—	36	—	—
1979	28	—	—	37	—	—

†The numbers in the table are differences between white and African American mathematics and science proficiency scale scores. Between 1977 and 1988 the white math scores for age 9 increased from 224 to 235, for age 13 from 272 to 279, for age 17 from 306 to 310. The white science scores for age 9 increased from 230 to 237, for age 13 students from 256 to 265, for age 17 students from 298 to 302.

*From Beaton and Zwick 1990. This table reports data from four assessments which were given in 1978 (1977 for science), 1982, 1986, and 1988. Because the assessments were not given at regular intervals (such as every four years) it was impossible to form regular birth cohorts. Therefore crude cohorts are shown using data from groups with close birth years. For example, in the row labeled 1968, 1969 the difference score in science of 55 for the 9-year-olds was for a group of students born in 1968 while the difference scores for the 13- and 17-year-olds are for students born in 1969.

- Changes in instruction and curriculum over the past 25 years seem to have had a considerable influence on reducing the achievement gaps.

School curricula, which have become increasingly homogenized as a result of the emphasis on basic skills and minimum competencies, appear to have contributed to an increase from 1971 to 1988 in test scores of African Americans, and to a lesser extent, "educationally disadvantaged" students. By contrast, the scores of white and "educationally advantaged" students remained constant during this period.[13]

IV. What are the policy implications of these findings?

One important question is what these analyses suggest for the future. Unfortunately, the achievement gap between African Americans and whites or between educationally disadvantaged and educationally advantaged students may not continue to close. There are four reasons for concern:

[13]See Smith and O'Day 1991 for a discussion of achievement trends among educationally "advantaged" and "disadvantaged" students. These conclusions are based on analyses of NAEP scores and use self-reported data on parental education and types of reading materials in the home. They are therefore subject to the limitations of self-reported data generally, and particularly in the case of 9-year olds.

1. The effects of the demographic changes including the migration to the North and the urban areas and the effects of the desegregation of the South may have already born their fruit in achievement gains for African Americans.

2. The potentially important effects of the recent decline in college going for young African Americans (future parents) have not yet surfaced in students'(their children's) achievement scores.

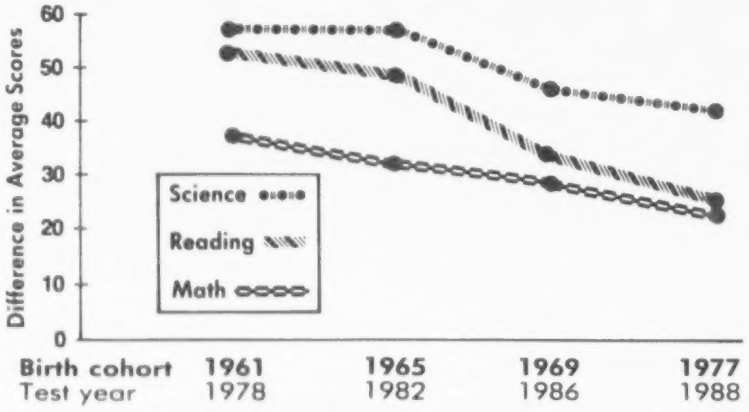
3. The potentially very damaging effects of increased poverty, increased density of poverty, and increased numbers of children born with toxic dependence or other health problems have yet to be reflected in students' achievement scores. These problems disproportionately affect children of color.

4. The instructional goals for U.S. schools have begun to change from an emphasis on basic skills, rote memorization, and acquisition of broad but fragmented knowledge to an emphasis on problem solving, active student engagement in learning and deep understanding of coherent material. This trend is potentially beneficial for all U.S. students. However, unless reformers consciously address issues of equality of opportunity, progressive changes of this sort will likely come last to the schools of the most needy. Such a reform movement could become a double-edged sword, slicing away at the relative gains made in recent years by minority and low-income students.

These considerations suggest that the achievement gap may stabilize or even increase again in the future unless we as a society take some necessary steps. The data suggest that the steps must address both the out-of-school and the within school environment. The achievement gap will not continue to shrink if we focus only on providing early health care, or on expanding preschool education or on improving instruction in elementary school, though each of these steps is important. Achievement inequalities have diminished over the past 20 years because of the cumulative impact of a complex set of home, school, and societal factors which operate throughout the pre-adult life of our children. Only if we continue to pay attention to all these factors is there much hope that the gap will continue to close in the future.

FIGURE 4

Trends in NAEP Score Differences Between White and African American Students, Age 17



Note: For the source and description of data, please see Tables 1 and 2.

Proposals for Policy Interventions. The task of improving both quality and equality in American education is complicated by the competition with other social needs for increasingly scarce resources during this period of economic retrenchment. Our suggestions for policy interventions designed to further reduce the achievement gap take into account the limits imposed by these fiscal constraints as well as the changes proposed by the current restructuring movement in education.

There are, of course, a large number of important areas to tackle. The goals and policy interventions discussed below deal with three of the most crucial areas, focusing on those factors that offer the most hope of influencing the educational achievement of needy youngsters. The three interventions specifically address the pre-school environment of students, the school curriculum and instructional program, and the after school environment for school aged children.

1. Insure that low-income children are ready for school.

The interventions here would be targeted to insure that low-income children are physically and educationally ready to enter school. This is Goal I of the six National Education Goals adopted in 1990 by the President and Governors.

One formulation of a strategy for reaching this goal was outlined by the Committee for Economic Development (CED 1987, p. 8). The CED package includes attention to the health of mothers through prenatal care and supplemental food programs, and to the physical and mental well-being of infants and children through guaranteed health care, assured immunization, access to a sound diet, and at least one year of meaningful pre-school experience. The CED report provides in-depth support for these recommendations as well as research showing their cost-effectiveness. This is an area where the federal government could take the lead, though the implementation would require close cooperation from state and local governments.

2. Provide all children a high quality, challenging, and coherent school instructional program.

This is a particularly complex goal and deserves much greater attention than can be given here. There is, of course, a desperate need to insure that all teachers have adequate instructional materials and that school buildings are safe, clean and hospitable. These are important conditions that every local and state agency should address. But their presence will not insure either that the curriculum and instruction will be of high quality or that it will be of comparable quality across groups of people in society.

One mechanism used by many other developed nations to promote both equality and quality for grades K-8 is a common curriculum. The common curriculum provides a natural structure for preparing teachers, for developing curricular materials, for legitimately assessing the progress of students, and for holding teachers and schools accountable. In the United States the states

should provide the leadership for insuring that all students have access to such a high quality curriculum. A number of states are moving toward an American version of the kind of coherent curriculum and instructional system provided by a national curriculum in other countries.

Three critical conditions are necessary to insure that such a system would work to help provide high quality instruction to all students. First, the curriculum content specifications (the curriculum frameworks) must be of the highest quality possible and they must be continually and carefully improved. Second, the frameworks would have to be used to provide a structure within which to organize and align other important educational components such as teacher training, certification, in-service and preservice; textbook and curricular materials; and student and teacher testing and evaluation. A common curriculum will have a chance to help increase both quality and equality only if teachers for all students know and can teach the material in the curriculum frameworks and if the examinations for all students assess material taught in the schools.

Finally, local school personnel must be given the freedom within the frameworks to interpret and implement instructional strategies that most effectively meet the needs of their students. As with the International Baccalaureate, the state frameworks would set out the general content and skills that students need to know, but local school personnel would decide how best to organize and teach the material.

3. Enhance educational opportunities for low-income and otherwise educationally needy students.

As discussed earlier, educational resources outside of the normal school day are critical in the educational development of the student. Strategies to enhance those resources include providing parents with knowledge and skills to help their own children, and ensuring availability of quality healthcare, preventative medicine, and nutritional diet for mothers and children. Still another is to help provide children from low-income families the opportunities for involvement in music, art, organized sports and other activities that middle-income children often enjoy.

One strategy would deliver all these services, and day care as well, for at least the 180-plus days of the school year. The strategy involves operating voluntary 12- to 14-hour a day elementary and junior high schools for students from high poverty communities.

One possible scenario is as follows: Students would come to school at 7 a.m. and leave at 7 p.m. Breakfast would be served, and the basic academic curriculum would be conducted in the morning, followed by lunch. After lunch, the "caretakers" would change. The teachers would remain on site for much of the afternoon to do lesson plans, collaborate with each other and tutor students needing special help. The afternoon for students would involve organized activities in arts, crafts and sports (volunteers could help); a study hall (perhaps with cross-age and peer tutoring); and a nap for younger students. Regular preventative medical services (checkups, inoculations) could be delivered at the school site on a regular basis. Finally, there could be a late afternoon or early evening literacy program for parents would be followed by transportation home or by dinner and transportation home. Such a program for the school days of the days of the year would provide a massive dose of educational support for many needy youngsters.

Programs like this already exist—mostly in private schools for some of our nation's advantaged youngsters. The challenge is to put such programs in the public schools, especially in the inner cities. To do so would require dealing with fiscal (not impossible at all), political and administrative issues as well as practical concerns such as insurance, transportation, and food service. These are all things that could be overcome with leadership at the local level.

Conclusion

Improving school readiness, developing high quality and coherent school programs, and enriching opportunities for the educationally needy are three important interventions which an ambitious nation could pursue to insure both quality and equality in education for all of its children. The proposals address the need to enhance both out-of-school and within school educational environments and are designed to promote the continued reduction of the achievement gaps between African American and white students and between rich and poor students while at the same time increasing achievement levels for all children.

One necessary requirement for implementation of the proposals is leadership at all levels of education governance—federal, state and local. A second necessary ingredient would be new resources in significant, but not outrageous, amounts. The consequence of successful implementation could be a dramatic dividend for the nation in the foreseeable future.

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CPRE Wins Two New Grants, Expands Research Mission

Two new five-year federal grants to study education reform policy and school finance have led to some changes at CPRE. Formerly known as the Center for Policy Research in Education, CPRE now is the Consortium for Policy Research in Education.

The Consortium for Policy Research in Education operates two separately funded, but interlinked research centers: The Policy Center and The Finance Center.

Both centers are funded by the U.S. Department of Education's Office of Educational Research and Improvement.

Members of CPRE are Rutgers, The State University of New Jersey; The University of Southern California; Harvard University; Michigan State University; Stanford University; and the University of Wisconsin-Madison.

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The research agenda for both the CPRE Policy Center and the CPRE Finance Center is built around three goals:

- To focus program and finance policy research on policies that foster high levels of learning for students from a broad range of social and economic backgrounds;
- To conduct research that will lead to greater coherence of state and local program and finance policies that promote student learning; and
- To conduct research that will increase the responsiveness of state and local finance and program policies to the diverse needs of students, schools, postsecondary institutions, communities and states.

In addition to conducting research as described above, CPRE publishes reports and briefs on a variety of education issues.* The Consortium also sponsors regional policy workshops for state and local policymakers.

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Levin argues that decentralizing decision making and increasing school staff participation in running schools are necessary elements of teacher empowerment. But they are not enough. Capacity-building at the school and district level is required to make teacher empowerment "more than a tantalizing slogan," says the author.

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Gary Lichtenstein, Milbrey McLaughlin, and Jennifer Knudsen

June 1991 (No. RR-020) $7

This paper presents a view of teacher empowerment which includes professional knowledge as a crucial aspect. The authors also propose a new definition of "professional knowledge" for teachers, one that goes beyond staff development efforts and other commonly proposed strategies to enhance teacher knowledge.

After a year of field study and literature review of structural, formal and institution-based efforts to empower teachers, the authors found that decentralization or enhanced teacher authority did not necessarily lead to teacher empowerment. The authors then shifted their research to look at knowledge-based reforms.

Through this approach, the authors discovered teachers who believe they are empowered in principle and practice, whose attitudes about teaching are upbeat, hopeful, and even enthusiastic. These teachers believe their practice represents a model of professionalism that ought to be widely developed.

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